NAVAL WAR COLLEGE

Newport, Rhode Island

OPERATIONAL TEMPO: CAN THE UNITED STATES NAVY KEEP PACE?

by

Thomas A. Russell
Commander, United States Navy

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: T A Russell

18 May 1998

P. A. Romanski

Capt P. A. Romanski
Faculty Advisor

REPORT DOCUMENTATION PAGE

1. Report Security Classification: UNCLASSIFIED

2. Security Classification Authority:

3. Declassification/Downgrading Schedule:

4. Distribution/Availability of Report: DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

5. Name of Performing Organization: JOINT MILITARY OPERATIONS DEPARTMENT

6. Office Symbol: C

7. Address: NAVAL WAR COLLEGE
686 CUSHING ROAD
NEWPORT, RI 02841-1207

8. Title (Include Security Classification):
Operational Tempo: Can the United States Navy Keep Pace? (U)

9. Personal Authors:
CDR Thomas A. Russell, USN

10. Type of Report: FINAL

11. Date of Report: 18 May 1998

12. Page Count: 18

13. Supplementary Notation: A paper submitted to the Faculty of the NWC in partial satisfaction of the requirements of the JMO Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.

14. Ten key words that relate to your paper:
Operational Tempo, Decision Making, Initiative

15. Abstract:
Operational tempo has been defined as a key to success in warfare. Two tenets that are essential to operational tempo are: (1) the ability to make decisions and execute faster than the enemy; and (2) to develop freedom of action by utilizing the initiative of subordinates to exploit enemy vulnerabilities. The purpose of this paper is to explore through theory and historical comparisons a mismatch between doctrinal desires in respect to operational tempo and the reality of current naval strategy. Specific analysis is conducted on how operational decision making is slowed instead of increased through: (1) information dominance, (2) lack of education at the operational level of war, and (3) influence of Total Quality Leadership. Analysis is also conducted on how initiative is becoming a lost art due to: (1) centralized control systems and (2) a risk averse culture.

It is concluded that unless the Navy trains its leadership in the concepts of the operational level of war and creates a culture that promotes initiative and innovation that the operational commander will have little trust and confidence in the Navy as a subordinate commander. The operational commander will lean toward a centralized control system that will slow his decision making and create missed opportunities in exploiting enemy vulnerabilities at the tactical level from lack of subordinate initiative.

16. Distribution / Availability of Abstract:	Unclassified	Same As Rpt	DTIC Users
	X		

17. Abstract Security Classification: UNCLASSIFIED

18. Name of Responsible Individual: CHAIRMAN, JOINT MILITARY OPERATIONS DEPARTMENT

19. Telephone: 841-6461 **20. Office Symbol:** C

Abstract of

OPERATIONAL TEMPO: CAN THE UNITED STATES NAVY KEEP PACE?

Operational tempo has been defined as a key to success in warfare. Two tenets that are essential to operational tempo are: (1) the ability to make decisions and execute faster than the enemy, and (2) to develop freedom of action by utilizing the initiative of subordinates to exploit enemy vulnerabilities.

The purpose of this paper is to explore through theory and historical comparisons a mismatch between doctrinal desires in respect to operational tempo and the reality of current United States Navy concepts. Specific analysis is conducted on how operational decision making can be slowed instead of quickened through: (1) information dominance, (2) lack of education at the operational level of war, and (3) influence of Total Quality Leadership. Analysis is also conducted on how initiative is becoming a lost art due to: (1) centralized control systems, and (2) a risk-averse culture.

It is concluded that unless the Navy trains its leaders in the concepts of the operational level of war, and creates a culture that promotes initiative and innovation, the operational commander will have little trust and confidence in the Navy as a joint force component. The operational commander will lean toward a centralized control system that will slow his decision making and create missed opportunities in exploiting enemy vulnerabilities at the tactical level due to lack of subordinate initiative.

Introduction

A key responsibility of the operational leader essential to the successful conduct of war is maintaining operational tempo. This responsibility has stood the test of time as a central element of victory. Two methods that the leader utilizes to ensure operational tempo are to make timely decisions and to maintain the initiative. The operational leader who makes and carries out sound decisions faster than the enemy—operating within the enemy's decision and execution cycle—increases the relative tempo of operations and leverages the capabilities of maneuver and firepower.[1] The operational commander also generates high tempo operations during the uncertainty, disorder, and fluidity of combat by influencing his subordinate commanders to exploit opportunities by using their initiative to make decisions. Such decisions are based on the tactical situation and their understanding of the leader's operational intent.[2]

An operational commander must orchestrate the actions of a large and complex organization under the most difficult of circumstances, and must out-think his enemy counterpart. His span of control is so great that there is little possibility of understanding and directly responding to everything that happens. Therefore, he must impose his will on people with whom he has little or no direct contact, and he must get them to act as he would wish, even though he cannot know all the situations they will face or even be entirely familiar with their personalities.[3]

---

[1] Department of the Navy, Naval Command and Control (Naval Doctrine Publication 6) (Washington, D.C.: May 19 1995), 4.
[2] Department of the Navy, Warfighting (Marine Corps Doctrinal Publication 1) (Washington, D.C.: June 20 1997), 78.
[3] Robert C. Rubel, "Gettysburg and Midway: Historical Parallels in Operational Command," Naval War College Review, Winter 1995, 96.

Despite publication of these truisms in joint and Service doctrinal manuals, a mismatch currently exists between such doctrine and the Navy's execution strategy to achieve timely decision making and initiative. By utilizing theoretical and historical comparisons, this paper analyzes the Navy's current lack of focus in cultivating an officer corps that has the judgmental skills to make timely decisions in combat, and the courage to take the initiative when predetermined operational plans have outlived their usefulness. Specifically, this paper explores how reliance on information technology, lack of professional military education, and influence of Total Quality Leadership can be detrimental to timely operational and tactical decision making. It also analyzes how the trend toward a centralized command and control system, and a culture that is risk-averse can preclude growing an officer corps that has the moral courage to display personal initiative when necessary. The outcome of these factors is to slow the pace of the operational commander's tempo.

Decision Making

Joint Vision 2010 states that in future wars U.S. forces will be reliant on information dominance as a force multiplier. Improvements in information and systems integration technologies will provide military decision makers with accurate and timely data. Warfighters will be able see an interactive battlespace picture, prioritize, assign, and assess information to make timely decisions faster than the enemy.[4] By providing a faster, clearer reading of the situation and a more effective distribution of resources, a superior command system may serve as a force multiplier and compensate for weakness

[4] John M. Shalikashvili, Joint Vision 2010 (Washington, D.C.: 1996), 13.

in other areas, such as numerical inferiority or politically induced need to leave the initiative to the enemy.[5]

Yet the doctrinal publications of all Services describe war as disorderly, dynamic, dominated by friction, constantly changing, and full of uncertainty, better known as the "fog of war." Clausewitz said that, "a great part of the information obtained in war is contradictory, a still greater part is false, and by far the greatest part is uncertain."[6] The uncertainty and constantly changing environment of warfare is caused, to a large degree, by the two opponents fighting and attempting to impose their wills on each other. Without an information system that can read the mind of the enemy, the attainment of certainty is impossible. Contrary to these beliefs, revolution in military affairs adherents believe that future information superiority will eventually lift the fog of war.

While information dominance is absolutely vital to the conduct of modern war, it may, if accurate understanding and usage are not achieved, constitute part of the disease it is supposed to cure.[7] In order to maintain operational tempo, decision making must transpire faster and better than the enemy's. Yet, a normal human tendency is to seek certainty. To attain certainty one must have all the relevant information. The more the available information, however, the longer the time needed to process it, and the greater the danger of failing to distinguish between the relevant and the irrelevant, the important and the unimportant, the reliable and the unreliable.[8] Incoming data can act as a brake on decision making by reason that the next message or report, due in any minute, could

---

[5] Martin van Creveld, Command in War, (Cambridge, MA: Harvard University Press, 1985), 4.
[6] Ibid., 266.
[7] Andrew Gordon, Rules of the Game, (Annapolis, MD: Naval Institute Press, 1996), 582.
[8] van Creveld, 267.

contain the information relevant to the current decision.[9] The amount of information available today is overwhelming, and, compounded by the speed at which it arrives, can lead to information overload for the decision maker. This actually lengthens the decision making cycle instead of reducing it.

Naval doctrine suggests an appropriate answer to this dilemma by stating that the command and control system which utilizes information superiority encompasses not only the equipment and technology, but also the leadership, training, organization, and doctrine that guide it. In other words, the commander (decision maker) is an integral part of the system, not just a user of it.[10] The only way out of the self-defeating dilemma of the human desire for certainty and our information system's eagerness to provide it is the commander's intuitive judgement.[11] Marine Corps doctrine states that we must not strive for certainty before we act, for in so doing we will surrender the initiative and pass up opportunities.[12] We must have the moral courage to make tough decisions in the face of uncertainty when the natural inclination would be to postpone the decision making pending more complete information.[13] Admiral Thomas Hayward states that the experience and judgment of the commander is the most important of all criteria that will lead to better decision making.[14] The problem becomes "how to gain experience in combat decision making during extended periods of peace where battles at sea are essentially nonexistent?" This is especially relevant during peacetime periods when the Navy is subject to multiple, not necessarily consistent, internal and external political,

---

[9] Gordon, 585.
[10] NDP-6, 11.
[11] van Creveld, 267.
[12] MCDP 1, 81.
[13] Ibid., 87.
[14] James G. March and Roger Weissinger-Baylor, Ambiguity and Command: Organizational Perspectives on Military Decision Making (Marshfield, MA: Pitman Publishing, 1986), 265.

professional, and economic demands that dominate operational decisions.[15] Captain William Outerson wrote that battle skills

> ...are not capabilities that an officer automatically acquires when he achieves flag rank, nor are they capabilities that are already possessed by all officers who become admirals. We cannot assume that the officer finding himself in real combat situations will be able to resolve them correctly simply because he wears broad gold stripes. They are capabilities that must be cultivated.[16]

From the above discussion follows a second key consideration: the experience and judgment required for combat decision making has to be cultivated through military assignments, training, and education during peacetime. While the Navy may have an adequate program to cultivate combat decision makers through selective assignments and training, there exists a serious deficiency in education, specifically the professional military education (PME) taught at the senior Service colleges needed to operate in the joint environment. The disparity in PME experience between flag officers of other Services and the Navy is striking. One hundred percent of all Army and Air Force Generals have attended both Intermediate and Senior PME; within the Marine Corps, 96 percent have completed at least one phase and 90 percent have completed both.[17] Only 34.9 percent of Navy admirals have completed one PME level and 3.4 percent have attended both levels.[18] Without the education of operational art and operational intent (included in PME), the Navy runs the risk of misunderstanding the rationale and intent of an operational commander who is schooled in these techniques of warfare. The Navy's senior leaders are perhaps proven tacticians but are clearly inexperienced in operational

---

[15] Ibid., 5.
[16] Gordon, 597.
[17] James R. Stark, "Professional Military Education," Briefing, Chief of Naval Operations, Washington D.C.: 26 February 1996.
[18] Ibid.

art and the operational level of war.

Had Lieutenant General Richard Ewell understood the operational level of war and Robert E. Lee's operational intent, the results of Gettysburg could have been much different. Ewell's rapid promotion to Corps commander after the death of Stonewall Jackson found him with little opportunity to cultivate the confidence in either his own judgment or the capabilities of his lieutenants.[19] General Lee's discretionary orders to occupy Culp's Hill "if practical" on the first day of the battle would have been understood by Jackson who had an appreciation for his superior's aggressive nature. Ewell, not being familiar with the operational level of war or his superior's intent, did not attack when Culp's Hill was his for the taking.

It is vital that the Navy understand operational art and the operational level of war. Without this understanding we will be prone to struggle again through a series of tactical successes in the next war without producing any useful result for the nation.[20] Admirals Chester Nimitz and Raymond Spruance attributed their successful operations during World War II to the education they had received at the Naval War College.[21] Rear Admiral Stark says that, "the skills required to operate at the operational level cannot be learned in the cockpit or on the bridge of a ship. They must be accrued through formal education."[22] The Navy should require all unrestricted line officers to complete Intermediate PME either by attending a Service college or by completing the College of

---

[19] Rubel, 104.
[20] C.D. Holder, "Training for the Operational Level," Parameters, Spring 1986, 13.
[21] Raymond G. O'Connor, "Reflection on the Characteristics of a Commander," Naval War College Review, October 1968, 40.
[22] Stark.

Continuing Education (CCE) course prior to selection to O-4. Senior PME should be attended for selection to O-6.

The CCE course should be reconstructed to become "user friendly." It is almost impossible to maintain the motivation to complete this essay-intensive course while operating in the fleet. The length of time required to complete this course normally covers two tours, and the time available to the student will change if transitioning from shore duty to sea duty. The course should be formatted to allow the individual to complete it during a single two-year shore assignment.

A third key point concerning combat decision making is the influence of Total Quality Leadership (TQL), and how it can affect operational tempo. Since the Department of the Navy embraced TQL's approach to leadership and management in 1986, over a decade of officers in the Navy have been taught the techniques and methodology of this customer oriented, participative approach to process improvement.

While TQL is founded on skills and characteristics acceptable to the successful operational leader, the methodology by which TQL reaches decisions is not acceptable at either the operational or tactical level of war. TQL decisions are made by investigating a given process with Process Action Teams (PAT) that gather data for statistical significance, while checking variance and control limits. Much like the previous discussion on seeking certainty, during combat waiting for the results of a PAT team (certainty) is not feasible under compressed decision cycles. TQL, which is a form of systems analysis, lends itself better to financial and technological problems than to operational ones, where the enemy's independent will is not entirely governed by the

means at his disposal or what the numbers statically tell him.[23] Leaders utilizing TQL techniques in combat will have a lethargic decision making cycle while waiting for statistical significance, thus slowing operational tempo. Regardless of TQL's longevity in the Navy, naval warriors should be taught combat decision making techniques, specifically in an environment of information systems that saturate the decision cycle with a plethora of data.

Initiative

NDP-6 states that initiative is crucial to success in a maneuver warfare strategy, which is characterized by the high tempo generated when commanders at the lowest level are free to recognize and exploit enemy vulnerabilities as they present themselves during combat.[24] The Navy seeks to capitalize on the unique human abilities of initiative, boldness, creativity, and judgement to overcome the uncertainty and disorder of combat.[25] Seizing and maintaining the initiative may lie at the heart of naval warfighting, but the trend towards centralized control and a culture of risk-aversion is leading the Navy away from cultivating an officer corps that has the moral courage to generate initiative.

> From the Vietnam experience, it is now much better understood, by both the military and civilians, that the way the war was managed from Washington was wrong. We have also learned from recent crises that the political leadership must be involved and must be kept informed throughout. But, in crisis execution we have found that people on the scene must be left alone—we must select them right, train them right and have total confidence in their judgment and performance.[26]

---

[23] van Creveld, 240.
[24] NDP-6, 10.
[25] Ibid. 52.
[26] March and Weissinger-Baylor, 267.

Yet the command and control systems under development today with advanced information systems are to provide accurate, timely, and relevant views of the battlespace to leaders at all levels of war; this allows them the ability to monitor and directly control the actions of subordinates, thus a more centralized control.[27] Since this command and control capability exists at all levels of war, doctrinal publications now suggest that decentralized crisis execution is the preferred method of control, but at times the commander may elect to centralize certain functions.

One could argue that it is almost impossible for leaders with full battlespace awareness to maintain decentralized control, particularly during peacetime where most tactical actions are treated as if they have strategic impact, even if they do not.

> Presented with such opportunities for asserting centralized control, decision makers in Washington were not slow in seizing them. The temptation that all the developments in C3 represented for decision making by remote control proved irresistible; between 1946 and 1975 the president was involved in 73 percent of two hundred crises that took place all over the world, even though legal requirements for his intervention existed in only 22 percent of them.[28]

"Operation Tree Cut Down" in Korea was almost a fiasco, when people in the Washington situation room literally attempted to talk to the Lieutenant Colonel at the DMZ at the very moment of execution.

> If higher authority issues orders that should have been given by a subordinate, a lot of very undesirable things are apt to occur. First, the initiative of the subordinate commander is sapped. It is obvious that his seniors do not have confidence in his judgement or his ability.[29]

The debate over decentralized or centralized control is as old as England's Seventeenth century Dutch Wars, but left unresolved can have serious consequences as

---

[27] Joint Warfighting Center, Concept for Future Joint Operations: Expanding Joint Vision 2010 (Fort Monroe, Va.: 1997), 68.
[28] van Creveld, 237.
[29] Arleigh A. Burke, "The Art of Command," Naval War College Review, June 1972, 26.

the British found years later during the battle of Jutland. When the German High Seas Fleet under the command of Vice Admiral Reinhard Scheer met the English Grand Fleet under the command of Vice Admiral John Jellicoe off the Danish coast in May 1916, Scheer opposed an English fleet with inconsistent ideologies of control. Jellicoe had trained his Battle Fleet under centralized control techniques that relied on commands by signals. In contrast, the Battle Cruiser Fleet, commanded by Vice Admiral David Beatty, had trained to a decentralized, Nelsonian style, which encouraged individual initiative. The combination of the two opposing styles of control operating simultaneously led to confusion and blunders, and can be attributed to Britain's inability to gain a decisive victory despite superiority.[30]

Some would argue that by moving toward a centralized control system during periods of peace, we will not generate the initiative required of subordinates during war. MCDP 1 states, "we cannot rightly expect our subordinates to exercise boldness and initiative in the field when they are accustomed to being oversupervised in garrison."[31]

Orders and operational intent should be specific and unambiguous; they should tell the subordinate "the what," but not "the how." Monitoring should be close enough to ensure reliable execution, but not to the point that subordinate authority is undermined and initiative is choked at all levels.[32] It has been forgotten that at Trafalgar no tactical instruction emanated from the flagship of Nelson after the fighting started because his subordinates knew exactly his purposes and how each could contribute to their realization.[33]

---

[30] Gordon, 566.
[31] MCDP 1, 81.
[32] van Creveld, 8.
[33] Gordon, 183.

The move toward control centralization of the British Navy at the time of Jutland is commonly attributed to the Victorian era's peacetime cultural conditioning of a service which had "forgotten what war was."[34] Have we too forgotten what war is like? Like the British Navy during the Victorian era, where petty rules and regulations were in part generated to quiet someone who was asking questions in the House of Commons, we too appear to be sailing into that trap. Today U.S. military forces are subjected to a cultural climate more authoritarian than any time in history, much like the Victorian British who sought to structure and codify as many fields of behavior as possible in order to regulate their world, disarm the unpredictable, and perpetuate the status quo.[35] During peace the more rules, the fewer nasty surprises—if we can get everyone to play by the rules. So the challenge during peace is to get the force to play by the rules. This challenge, as well as the need to downsize, has created a force that is risk-averse, which does not engender initiative.

In 1908, Ensign Chester Nimitz ran the destroyer U.S.S. Decatur aground and was court-martialed. Ulysses S. Grant was relieved for cause for drinking problems prior to his command of the Army of the Potomac.[36] Had they made such mistakes today, it is doubtful that either career would have survived. As our forces are being downsized during this period of peace, some very good people must leave. Small insignificant mistakes made during this period did not necessarily result in an adverse fitness report, but could have generated one that was not good enough to get the service member promoted or screened in a numbers game where the supply far outpaces the demand.

---

[34] Ibid., 567.
[35] Ibid., 179.
[36] Patrick Pexton, "Zero-Defect Mentality," Navy Times, 5 February 1996, 11.

The risk of displaying initiative and thinking out of the box may be at odds with the boss's thoughts and is perceived as dangerous in a downsizing era. General Charles C. Krulak says a zero-defect mentality exists in all Services today.[37] The problem with "zero-defect" is related to what a wise man once said, "When asked how one avoids making mistakes, he replied that one does so by exercising good judgement. When asked how one develops good judgement, he replied 'by making mistakes'."[38]

To survive in a peacetime, authoritarian environment according to Professor Norman Dixon, one needs to conform. He relates that there are two distinct officer types that enter the service, equating to left side and right side brain talents. He calls them authoritarians and autocrats.[39]

> The authoritarian officer seeks peer group approval and promotion with which the peacetime armed services reward conformity. He draws self-esteem from the status imparted by his rank and uniform. He defers naturally to seniority and obeys orders to the letter, loves order and ceremony, is meticulous in attention to detail and is often paranoid about cleanliness. He is strong in sequential reasoning processes, suppresses his imagination, rejects information which conflicts with his or his seniors preconceptions, and is fearful of using his initiative. He keeps an unblotted copybook, thus gains unhindered advancement in peacetime. But he is easily disoriented by the crises and dilemmas of war, and responds inappropriately or not at all.[40]

> The autocratic officer's convictions often follow his instincts. He uses his initiative as a matter of habit. He is receptive to the possibility that his juniors might be right or his seniors wrong, and takes his career into his hands when he believes the latter to be the case. His attitude to hierarchy and military "bull" is casual or even overtly ironical; he tends to be individualistic, or negligent, about dress. His peacetime career ascent is often difficult because he lacks the docility convenient to his immediate seniors and he is typically considered disruptive. In wartime it falls to him to clear up the mess pioneered by the authoritarian who gained preferment over him in the years of peace.[41]

---

[37] Ibid., 14.
[38] O'Connor, 39.
[39] Gordon, 177-178.
[40] Ibid.
[41] Ibid., 178.

Dixon's thesis that peacetime military hierarchies naturally attract and reward authoritarian officers is supported by Alfred Thayer Mahan when he said: "Those who rise in peace are men of formality and routine, cautious, inoffensive, safe up to the limits of their capacity...punctilious about everything but what is essential! Yet void altogether of initiative, impulse and originality."[42]

The organization culture must be changed and to do that everything conducted in the Navy must be open for examination. Making mistakes must be thought of as the price of developing officers who are not afraid to show initiative.

Conclusion

Until the Navy trains its leadership in the concepts of the operational level of war and cultivates an officer corps that is not risk-averse, the operational commander will lean increasingly toward centralized control because of lack of trust in Navy commanders. The Navy should anticipate that the operational commander's intent will leave little room for initiative by describing "the what" and "the how." Both actions by an operational leader constitute a self-defeating cycle and will slow operational tempo.

The operational leader's span of control is so broad that it is impossible to manage both the operational and tactical levels of war. Centralizing control because of lack of trust in subordinates will slow the operational leader's decision making cycle from over-saturation. Jellicoe had little faith in his subordinates, so he led the Grand Fleet through a plethora of standing orders and formulae, drawn up to cover every possible contingency.[43] The lack of trust in subordinates will slow the decision making process at

[42] Ibid., 594.
[43] Ibid., 18.

the operational level and cause missed opportunities to exploit enemy vulnerabilities at the tactical level from lack of initiative.

The doctrinal debates of the British at Jutland are still with us today in the modern United States Navy. Effective command and control links are essential to effective warfighting, but it is also essential that commanders and their staffs have a clear understanding of the higher commander's intentions so that they can take action in the absence of timely direction.[44]

[44] Ibid., 570.

Bibliography

Alexander, Richard G. "Command and Decision." Naval War College Review, June 1962, 19-43.

Anderson, Gary W. and Terry C. Pierce, "Leaving the Technocratic Tunnel." Joint Force Quarterly, Winter 1995-96, 69-75.

Arquilla, John. "Strategic Implications of Information Dominance." Strategic Review, Summer 1994, 24-30.

Burke, Arleigh A. "The Art of Command." Naval War College Review, June 1972, 24-27.

van Creveld, Martin. Command in War. Cambridge, MA.: Harvard University Press, 1985.

Czege, Huba Wass de. "Leadership." Military Review, August 1992, 21-29.

Department of the Navy. Warfighting (Fleet Marine Force Manual 1) Washington D.C.: 20 June 1997.

Department of the Navy. Naval Command and Control (Naval Doctrine Publication 6) Washington D.C.: 19 May 1995.

Department of the Navy. Naval Warfare (Naval Doctrine Publication 1) Washington D.C.: 28 March 1994.

Galpin, Timothy. "Who Needs TQL." US Naval Institute Proceedings, April 1994, 98.

Gordon, Andrew. The Rules of the Game. Annapolis, MD.: Naval Institute Press, 1996.

Holder, C. D. "Training for the Operational Level." Parameters, Spring 1986, 7-13.

House, Randolph W. "The Warrior-Leader of the 21st Century." Field Artillery, June 1994, 40-41.

Joint Staff. Joint Vision 2010. Washington, D.C.: 1996.

Joint Warfighting Center. Concept for Future Joint Operations: Expanding Joint Vision 2010. Fort Monroe, VA, 1997.

Kirkland, Faris R. "The Gap Between Leadership Policy and Practice: A Historical Perspective." Parameters, September 1990, 50-62.

Murray, Williamson "Clausewitz Out, Computer In: Military Culture and Technological Hubris." The National Interest, Summer 1997, 57-64.

O'Connor, Raymond G. "Reflection on the Characteristics of a Commander." Naval War College Review, October 1968, 37-43.

Parry, Michael. "Unshackling the Command Chain." U.S. Naval Institute Proceedings, January 1997, 32-34.

Pexton, Patrick "Zero-Defect Mentality." Navy Times, 5 February 1996,11-14.

Rocke, Mark D. "Trust: The Cornerstone of Leadership." Military Review, August 1992, 30-40.

Rubel, Robert C. "Gettysburg and Midway: Historical Parallels in Operational Command." Naval War College Review, Winter 1995, Vol. XLVIII, No 1, 96-108.

Stark, James R. "Professional Military Education." Briefing. Chief of Naval Operations, Washington, D.C.: 26 February 1996.

United States Naval War College, Joint Military Operations Department, On Operational Art (2nd Draft). Newport, RI.: 1998.

Weissinger-Baylor, Roger and James G. March, Ambiguity and Command: Organizational Perspectives on Military Decision Making. Marshfield, MA.: Pitman Publishing Inc, 1986.

Wishart, Leonard P. III. "Leader Development and Command and Control." Military Review, Jul 1990, 11-17.